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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/720,385	11/25/2003	Jae Sung Kim	K-0196A	4279
34610	7590	06/29/2004	EXAMINER	
FLESHNER & KIM, LLP P.O. BOX 221200 CHANTILLY, VA 20153			HODGES, MATTHEW P	
			ART UNIT	PAPER NUMBER
			2879	

DATE MAILED: 06/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/720,385

Applicant(s)

KIM ET AL.

Examiner

Matt P Hodges

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 20 February 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 22-72 is/are pending in the application.
- 4a) Of the above claim(s) 1-21 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 22-72 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 11/25/2003.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Response to Amendment***

The Amendment, filed on 2-20-2004, has been entered and acknowledged by the Examiner.

Cancellation of claims 1-22 has been entered.

Addition of claims 22-72 has been entered.

### ***Claim Objections***

Claim 35 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Specifically claim 35 details that the widths of at least two gaps are either the same or different. This limitation would always be true and therefore does not further limit the claim.

Claims 23, 26, 33, 41, 49, 53, 58, 62, 67, and 70 are objected to because of the following informalities:

Regarding claim 23, claim 23 depends on claim 23 which is improper. It is assumed for the purposes of examination that applicants intended for claim 23 to depend on claim 22.

Regarding claim 24, claim 24 depends on claim 23. This is not an improper dependency but is brought to the attention of the applicant as the same claim structure is repeated in the other claims but in all other instances the dependency is to the preceding independent claim.

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Regarding claims 25-28, claims 25-28 are brought to the attention of the applicant for the same reason as claim 24.

Regarding claim 26, claim 26 depends on claim 23 and does not therefore have sufficient antecedent basis for the dielectric layer. It is assumed for the purposes of examination that applicants intended for claim 26 to depend on claim 25.

Regarding claims 33, 41, 49, 58, and 67, claims 33, 41, 49, 58, and 67 all repeat the error of claim 26 and are therefore objected to for the same reason.

Regarding claim 53, claim 53 does not provide sufficient antecedent basis for the term "barrier." It is assumed for the purposes of examination that applicants intended for claim 53 to depend on claim 48. Further regarding claim 53, there appears to be a grammatical error in claim 53. The sentence includes the line "including a width of barrier between" which appears to be incorrect.

Regarding claims 62 and 70, claims 62 and 70 repeat the error of claim 53 and are objected to for the same reasons.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 22-24, 27-31, 34-39, and 42-44 are rejected under 35 U.S.C. 102(e) as being anticipated by Nagano. (US 6,031,329).

Regarding claims 22 and 29, Nagano discloses (see figure 9) a substrate (1), a plurality of first sustain electrodes ( $x'$  and  $x'n$ ) formed on the substrate, a plurality of second sustain electrodes ( $y_n$  and  $y'$ ) also formed on the substrate, and a dielectric layer (4) formed over both sets of electrodes. In the first display cell, the widths of both  $x'$  and  $y'$  are  $467.5\text{ }\mu\text{m}$ , of both  $x'n$  and  $y_n$  are  $75\text{ }\mu\text{m}$ , and the gaps are  $50\text{ }\mu\text{m}$  between  $x'$  and  $x'n$  and also  $y_n$  and  $y'$ . Finally the gap between  $x'n$  and  $y_n$  is  $75\text{ }\mu\text{m}$ . (Column 5 lines 30-42). All electrodes run in a line across the full length of the substrate thus the ratio of the widths of the gaps to the widths of the electrodes is equal to the ratio of the surface areas of the gaps to the surface areas of the electrodes. In both cases, the combined widths and surface areas of the gaps are about 16% of the combined widths and surface areas of the electrodes. (Column 13 lines 10-18 and Column 14 lines 7-26).

Regarding claims 23, 24, 30, and 31, Nagano further discloses (see figure 9) the arrangement of electrode pairs such that the electrode pairs are alternatively arranged and the order of the electrodes is in different positions in adjacent electrode pairs. (See figure 9).

Regarding claims 27 and 34, both the widths and the surface areas of the first and second sustain electrodes are identical.

Regarding claim 35, the widths and surface areas of the gaps between  $x'$  and  $x'n$  and also  $y_n$  and  $y'$  are equal.

Regarding claims 28 and 36, Nagano further discloses the use of bus electrodes (15) made of a metal material and transparent electrodes (16) which are larger than the bus electrodes and are partially overlapped by the bus electrodes. (Column 13 lines 15-18).

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Regarding claim 37, Nagano discloses the device as claimed (see rejection of claim 22 above) and further states that the combined widths or surface areas of the gaps are about 32% of the combined widths or surface areas of the first sustain electrodes. (See rejection of claim 22).

Regarding claims 38 and 39, claims 38 and 39 are rejected for the same reasons as claims 23 and 24 above.

Regarding claim 42, claim 42 is rejected for the same reasons as claim 27 above.

Regarding claim 43, claim 43 is rejected for the same reasons as claim 35 above.

Regarding claim 44, claim 44 is rejected for the same reasons as claim 28 above.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 45-47, 50-56, 59-65, and 68-72 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nagano. (US 6,031,329).

Regarding claims 45 and 53, Nagano discloses the device as claimed (see rejection of claim 22 above) and further states that the width or surface area of the largest gap is 75  $\mu\text{m}$ . Nagano further discloses the use of barrier ribs and address electrodes on a back plate running perpendicular to the sustain electrodes where the barrier ribs separate cells for the emission of blue, red and green light. (Column 14 lines 10-18). However Nagano does not appear to specify the width of the elements of the back plate. Specifically Nagano appears to be silent on the

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width of the pixel pitch. However it is well established in the art of plasma display panels that the pixel pitch of a PDP is of a width at least as great as the width of the lateral distance of the discharge cell. In this case the lateral distance of the discharge cell is 1260  $\mu\text{m}$ . A pixel pitch of at least this length advantageously improves contrast and visibility of the device, by providing a maximum discharge space while not exceeding desired line width. Thus, it would have been obvious at the time the invention was made to a person having ordinary skills in the art to incorporate a minimum pixel pitch equal to the lateral discharge space in order to advantageously improve contrast and visibility of the device.

Further regarding claim 45, at the minimum pixel pitch of 1260  $\mu\text{m}$ , the maximum gap would be about 6% of the pixel pitch.

Regarding claims 46 and 47, claims 46 and 47 are rejected for the same reasons as claims 23 and 24 above.

Regarding claim 50, claim 50 is rejected for the same reasons as claim 27 above.

Regarding claim 51, claim 51 is rejected for the same reasons as claim 35 above.

Regarding claim 52, claim 52 is rejected for the same reasons as claim 28 above.

Regarding claims 54 and 65, claims 54 and 65 are rejected for the same reasons as claim 45 above. Further the combined widths and surface areas of the gaps are about 16% of the combined widths and surface areas of the electrodes. (Column 13 lines 10-18 and Column 14 lines 7-26).

Regarding claims 55 and 56, claims 55 and 56 are rejected for the same reasons as claims 23 and 24 above.

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Regarding claim 59, claim 59 is rejected for the same reasons as claim 27 above.

Regarding claims 60 and 68, claims 60 and 68 are rejected for the same reasons as claim 35 above.

Regarding claims 61 and 69, claims 61 and 69 are rejected for the same reasons as claim 28 above.

Regarding claims 62 and 70, claims 62 and 70 are rejected for the same reasons as claim 54 above.

Regarding claims 63 and 71, Nagano further states that the combined widths or surface areas of the gaps are about 32% of the combined widths or surface areas of the first sustain electrodes. (See rejection of claim 22).

Regarding claims 64 and 72, Nagano further states that the combined widths or surface areas of the gaps are about 32% of the combined widths or surface areas of the second sustain electrodes. (See rejection of claim 22).

Claims 25, 32, 40, 48, 57, and 66 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nagano (US 6,031,329) in view of Sano et al. (US 6,249,264).

Regarding claim 25, Nagano discloses the device as claimed (see rejection of claim 22 above) but does not appear to disclose the use of intersecting barrier ribs. However Sano, in the same field of endeavor, discloses the use of intersecting barrier ribs in order to advantageously isolate neighboring cells to prevent leakage of discharge between cells. (See abstract). Thus, it would have been obvious at the time the invention was made to a person having ordinary skills



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in the art to use intersecting barrier ribs as taught by Sano into the device as disclosed by Nagano in order to advantageously prevent leakage of discharge between cells.

Regarding claims 32, 40, 48, 57, and 66, claims 32, 40, 48, 57, and 66 are rejected for the same reasons as cited in the rejection of claim 25 above.

Claims 26, 33, 41, 49, 58, and 67 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nagano (US 6,031,329) in view of Sano et al (US 6,249,264) and further in view of Katayama et al. (US 6,211,614).

Regarding claim 26, Nagano in view of Sano discloses the device as claimed (see rejection of claim 25 above) but does not appear to disclose the width of the dielectric layer being at least 25  $\mu\text{m}$ . However Katayama, in the same field of endeavor, discloses (see figure 1) a plasma display panel with a dielectric layer 17 with a thickness of 30  $\mu\text{m}$ . (Column 3 lines 66-67). The width of the dielectric layer in part determines the discharge power or brightness of the plasma display panel. Thus, it would have been obvious at the time the invention was made to a person having ordinary skills in the art to incorporate the 30  $\mu\text{m}$  dielectric width as described by Katayama into the device as taught by Nagano in view of Sano in order to advantageously optimize the brightness of the emission.

Regarding claims 33, 41, 49, 58, and 67, claims 33, 41, 49, 58, and 67 are rejected for the same reasons as cited in the rejection of claim 26 above.


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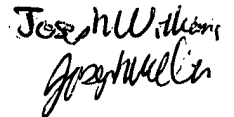
*Contact Information*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matt P Hodges whose telephone number is (571) 272-2454. The examiner can normally be reached on 7:30 AM to 4:00 PM M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel can be reached on (571) 272-2457. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7382 for regular communications and (703) 308-7382 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

mph 

  
Joseph W. Wilson